

# EXECUTIVE SUMMARY

## Introduction

This Draft Programmatic Environmental Impact Statement (EIS) was prepared by the U.S. Army Corps of Engineers (COE), the U.S. Environmental Protection Agency (EPA), the U.S. Department of Interior's Office of Surface Mining (OSM) and Fish and Wildlife Service (FWS), and the West Virginia Department of Environmental Protection (WVDEP) ("the agencies"). The purpose of this EIS is to evaluate options for improving agency programs under the Clean Water Act (CWA), Surface Mining Control and Reclamation Act (SMCRA) and the Endangered Species Act (ESA) that will contribute to reducing the adverse environmental impacts of mountaintop mining operations and excess spoil valley fills (MTM/VF) in Appalachia. Preparation of this EIS involved substantial information gathering over the past four years, and it describes relevant historical data, details several possible alternative policy frameworks, and contains the results of over 30 scientific and technical studies conducted as a part of this effort. The agencies identified a preferred alternative that incorporates programmatic improvements at the state and Federal levels intended to provide enhanced environmental protection and agency coordination during permit reviews under SMCRA and CWA consistent with the primary goal of minimizing adverse environmental effects.

This document is organized into major sections that describe relevant historical information on Appalachian MTM/VF practices; permitting; policy and regulatory approaches pertinent to the action alternatives presented; and potential impacts of such approaches, including the results of studies that evaluated various aspects of MTM/VF. The agencies now seek comment from the public on the information presented here, in particular on the proposed course of action described as the preferred alternative (Alternative 2).

## Origin, Background, and Scope

On February 5, 1999, the COE, EPA, OSM, FWS, and WVDEP published a Notice of Intent in the Federal Register [64 FR5778] to develop an EIS with the following stated purpose:

*"... to consider developing agency policies, guidance, and coordinated agency decision-making processes to minimize, to the maximum extent practicable, the adverse environmental effects to waters of the United States and to fish and wildlife resources affected by mountaintop mining operations, and to environmental resources that could be affected by the size and location of excess spoil disposal sites in valley fills."*

The agreement to prepare the Draft EIS is contained in a settlement agreement that resolved the Federal claims of the coal mining court case known as *Bragg v. Robertson*, Civ. No. 2:98-0636 (S.D. W.V.). This is a "programmatic" EIS consistent with the National Environmental Policy Act (NEPA) in that it evaluates broad Federal actions such as the adoption of new or revised agency program guidance, policies, or regulations. "Mountaintop mining" refers to coal mining by surface methods (e.g., contour mining, area mining, and mountaintop removal mining) in the steep terrain of the central Appalachian coalfields. The additional volume of broken rock that is often generated as a result of this mining, but cannot be returned to the locations from which it

was removed, is known as “excess spoil” and is typically placed in valleys adjacent to the surface mine, resulting in “valley fills.” Background on the NEPA process, issues analyzed as part of this EIS, and relevant historical information can be found in Chapter I.

The geographic focus of this study involves approximately 12 million acres, encompassing most of eastern Kentucky, southern West Virginia, western Virginia, and scattered areas of eastern Tennessee. The study area contains about 59,000 miles of streams. Some of the streams flow all year, some flow part of the year, and some flow only briefly after a rainstorm or snow melt. Most of the streams discussed in this EIS are considered headwater streams. Headwater streams are generally important ecologically because they contain not only diverse invertebrate assemblages, but some unique aquatic species. Headwater streams also provide organic energy that is critical to fish and other aquatic species throughout an entire river. Ecologically, the study area is valuable because of its rich plant life and because it is a suitable habitat for diverse populations of migratory songbirds, mammals, and amphibians. The environment affected by MTM/VF is described in Chapter III.

The U.S. Department of Energy (DOE) estimated in 1998 that 28.5 billion tons of high quality coal (i.e., high heating value, low sulfur content) remain in the study area. DOE reported about 280 million tons of coal were extracted by surface and underground mining from the study area in 1998. Coal produced from the study area continues to provide an important part of the energy needs of the nation. Regionally, coal mining is a key component of the economy providing jobs and tax revenue. Almost all of the electricity generated in the area comes from coal-fired power plants. Although coal production remains high, productivity gains and new technology have reduced the need for coal miners. Unemployment, poverty, and out migration in the study area are well above the national average. Mining methods, demographics and economics are also discussed in Chapter III.

The Surface Mining Reclamation and Control Act (SMCRA) was enacted by Congress in 1977 to provide a comprehensive program to regulate surface coal mining and reclamation operations, including MTM/VF. A variety of Clean Water Act (CWA) programs apply to MTM/VF activities where these activities may impact the chemical, physical, and biological integrity of the nation’s waters. Section 404 of the CWA regulates the discharge of dredged or fill material into waters of the U.S. Section 402 regulates all other point source discharges of pollutants into waters of the U.S. Technology based effluent limits for the NPDES program are established by EPA to restrict the concentration of particular pollutants associated with a particular industry (e.g., iron for coal mining discharges). Section 401 provides states with the authority to review and either deny or grant certification for any activities requiring a Federal permit or license, to ensure that they will not violate applicable state water quality standards. CWA and SMCRA regulatory agencies must either consult or coordinate with the FWS, as appropriate to ensure the protection of endangered and threatened species and their critical habitats as determined under the Endangered Species Act (ESA). Relevant features of the SMCRA, CWA, ESA, and Clean Air Act (CAA) programs are discussed throughout the document, but are described in some detail under the No Action Alternative in Chapter II and in Appendix B.

As a critical part of the scoping process for this EIS, the agencies met with the public and solicited comments regarding their concerns. Over 1,000 people attended the public meetings, over 640 people provided verbal statements, and 95 people submitted written comments.

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Concerns were expressed at the meetings about the changing regulatory climate and its impact on the livelihood of coal miners, as well as various adverse environmental impacts from mountaintop mining, including the loss of forested mountains, and the direct and indirect impacts of MTM/VF construction in headwater streams. The agencies funded studies and reviewed respective regulatory programs to determine if program improvements could be made to address the concerns. As study results were available, the agencies held workshops, symposia, and meetings to receive additional comments and stakeholder input as part of this NEPA process.

### Technical Studies

The agencies conducted or funded over 30 studies of the impacts of mountaintop mining and associated excess spoil disposal valley fills. The findings of these studies, along with the joint agency review of the existing regulatory environment, form the basis upon which the significance of each issue was evaluated. The results of these studies, compilation of previously published research, and information from various experts regarding the effects of mountaintop mining are in the appendices or are cited in the reference sections.

Individuals and agencies outside of the EIS development process conducted some studies. Opinions and views expressed by the authors of the studies were not altered. Their opinions and views in the studies do not necessarily reflect the position or view of the agencies preparing this EIS. These studies are grouped into four appendices based on these categories: aquatic; terrestrial; socio-economic; and engineering. The studies were summarized at the beginning of these four appendices. These appendix cover sheets are provided as an aid to the reader and do not necessarily reflect the opinions and views of the EIS agencies. The studies noted the following:

- Of the largely forested study area, approximately 6.8 % has been or may be affected by recent and future (1992-2012) mountaintop mining [USEPA, 2002]. In the past, reclamation focused primarily on erosion prevention and backfill stability and not reclamation with trees. Compacted backfill material hindered tree establishment and growth; reclaimed soils were more conducive for growing grass; and grasses, which out-competed tree seedlings, were often planted as a quick growing vegetative cover. As a result, natural succession by trees and woody plants on reclaimed mined land (with intended post-mining land uses other than forest) was slowed. Better reclamation techniques for growing trees on mined lands now exist and are being promoted.
- More species of interior forest songbirds occur in forest unaffected by mining than forest edge adjacent to reclaimed mined land. Grassland bird species are more predominant on reclaimed mines. Similarly, amphibians (salamanders) dominate unaffected forest, whereas reptiles (snakes) occupy the reclaimed mined lands. Small mammals and raptors appear to inhabit both habitats.
- Approximately 1200 miles of headwater streams (or 2% of the streams in the study area) were directly impacted by MTM/VF features including coal removal areas, valley fills,

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roads, and ponds between 1992 and 2002. An estimated 724 stream miles (1.2 % of streams) were covered by valley fills from 1985 to 2001. Certain watersheds were more impacted by MTM/VF than others.

- Based upon the study of 37 stream segments, intermittent streams and perennial streams begin in very small watersheds, with a median of 14 and 41 acres respectively.
- Streams in watersheds where MTM/VFs exist are characterized by an increase of minerals in the water as well as less diverse and more pollutant-tolerant macroinvertebrates and fish species. Questions still remain regarding the correlation of impacts to the age, size, and number of valley fills in a watershed, and effects on genetic diversity. Some streams below fills showed biological assemblages and water quality of good quality comparable to reference streams.
- Streams in watersheds below valley fills tend to have greater base flow. These flows are more persistent than comparable unmined watersheds. Streams with fills are generally less prone to higher runoff than unmined areas during most low-frequency storm events; however, this phenomenon appears to reverse itself during larger rainfall events.
- Wetlands are, at times inadvertently and other times intentionally, created by mining via erosion and sediment control structures. These wetlands provide some aquatic functions, but are generally not of high quality.
- Valley fills are generally stable, as evidenced by fewer than 20 reported slope movements out of more than 6800 fills constructed since 1985.
- The extraction of coal reserves in the study area could be substantially impacted if fills are restricted to small watersheds. The severity of impact to coal recovery correlates with the magnitude of the fill limitations and site-specific and operational factors.

### Actions and Alternatives

In Chapter II, the EIS identifies a number of proposed actions, presented in three action alternatives in addition to the No Action Alternative, to improve agency decision making and minimize the adverse effects from MTM/VF. The objective of the coordinated program improvements considered is to integrate application of the CWA and SMCRA to enhance environmental protection associated with MTM/VF operations. The CWA/SMCRA program improvements envisioned include more detailed mine planning and reclamation; clear and common regulatory definitions; development of impact thresholds where feasible; guidance on best management practices; comprehensive baseline data collection; careful predictive impact and alternative analyses, including avoidance and minimization; and appropriate mitigation to offset unavoidable aquatic impacts. The EPA, COE, and OSM propose to promulgate regulations and develop policies or guidance as necessary to establish an integrated surface coal mining regulatory program to minimize environmental impacts from MTM/VF.

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The No Action alternative describes the SMCRA and CWA programs as currently implemented in 2003. This alternative is the baseline from which to compare all other alternatives.

Alternative 1 provides for the COE, on a case-by-case basis, to make the initial determination of the size, number, and location of valley fills in waters of the U.S. Under this alternative, all MTM/VF projects that would involve proposed valley fills in waters of the U.S. would initially be handled as individual permits (IP) under CWA Section 404. The SMCRA and other permitting agencies would rely, to the extent practicable, on the COE decisions regarding fill placement in waters of the U.S.

Alternative 2 is the preferred alternative because of the improved efficiency, collaboration, division of labor, benefits to the public and applicants, and the recognition that some proposals will likely be suited for IPs, and others best processed as Nationwide Permit (NWP) 21. This alternative is unlike the other two action alternatives in that it integrates the features of SMCRA and CWA programs into a coordinated regulatory process to determine the size, number, and location of valley fills in waters of the U.S. The COE would determine whether an IP under CWA Section 404 is appropriate, relying in part on the SMCRA information provided by the applicant as part of a joint permit application. If so, CWA Section 404(b)(1) and NEPA compliance determinations would be made, similar to that discussed in Alternative 1. If a general permit, such as Nationwide Permit (NWP) 21, is appropriate, the COE would process the application following the SMCRA review similar to the description in Alternative 3. COE NWP 21 decisions would rely, to the greatest extent possible and consistent with legal requirements, on the information and conclusions from the relevant SMCRA review.

Alternative 3 provides for the SMCRA authority to assume the primary role in determining the size, number, and location of valley fills in waters of the U.S. This alternative is based on a procedural presumption by the COE that most MTM/VF applications would be processed as general permits under NWP 21 because the SMCRA review would be the functional equivalent of a CWA Section 404 IP. SMCRA programs would be enhanced through rulemaking to satisfy the informational and review requirements of the CWA Section 404 program, consistent with SMCRA authority. Under this alternative, any off-site mitigation would continue to be assured by the COE under CWA authorization.

The alternative summary table below briefly describes how agency actions would create a coordinated regulatory process for MTM/VF. Following the table are the highlights of the actions proposed to implement the complementary CWA/SMCRA programs.

<b>Table ES-1. Mountaintop Mining/Valley Fill EIS Alternatives Summary *</b>	
<b><i>No Action</i></b>	Maintains the regulatory programs, policies, and coordination processes that exist in 2003.
<b><i>Action Alternative 1</i></b>	The COE CWA Section 404 program would be the primary regulatory program for determining (on a case-by-case basis) whether and how large valley fills from MTM/VF would be authorized in waters of the U.S. The COE would presume that most projects would require the CWA Section 404 IP process, and general permit NWP 21 authorization would be applicable only in limited circumstances. The COE would perform requisite public interest review as well as appropriate NEPA analysis. As part of the IP process, the COE would

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**Table ES-1. Mountaintop Mining/Valley Fill EIS Alternatives Summary \***

	<p>largely rely on SMCRA reviews that adequately address terrestrial and community impact issues arising as part of public participation. COE would require mitigation of unavoidable aquatic impacts either through on-site replacement of aquatic functions or by in-kind, off-site watershed improvement projects within the cumulative impact area. The COE would be the lead agency for ESA consultation on aquatic resources and the SMCRA agencies would coordinate with FWS on aquatic and terrestrial species. All other regulatory programs would defer to, or condition decisions on attaining, the requisite CWA Section 404 approval. OSM would consider rulemaking so that the stream buffer zone would be inapplicable to excess spoil disposal in waters of the U.S. OSM would finalize excess spoil provisions to include minimization and alternative analysis more consistent with those under the CWA. Cross-program actions include rulemaking; continued research on MTM/VF impacts, improved data collection, sharing, and analysis; development of Best Management Practices (BMP) and Advance Identification (ADID) evaluations; and agency coordination memorialized by such mechanisms as Memoranda of Agreement. These actions would serve to further minimize the adverse effects on aquatic and terrestrial resources and protect the public.</p>
<b>Action Alternative 2 (Preferred)</b>	<p>The agencies would develop enhanced coordination of regulatory actions, while maintaining independent review and decision making by each agency. The size, location and number of valley fills allowed in waters of the U.S. would be cooperatively determined by CWA and SMCRA agencies based on a joint application and under procedures spelled out in such mechanisms as Memoranda of Agreement. OSM would apply functional stream assessments to determine onsite mitigation. OSM rules would be finalized to make the stream buffer zone more consistent with SMCRA and CWA. OSM excess spoil rules would be finalized to provide for fill minimization and alternatives analysis, similar to CWA Section 404(b)(1) Guidelines. The COE would make case-by-case decisions as to NWP or IP processing. Public interest review and NEPA compliance by the COE would occur for IPs and would be informed, to the extent possible, by the SMCRA permit. Mitigation of unavoidable aquatic impacts would be required to the appropriate level. ESA evaluations for IPs would be similar to those in Alternative 1; the SMCRA agency would take the lead for ESA coordination for NWP 21. FWS would retain the ability to consult on unresolved ESA issues for all CWA Section 404 applications. Cross-program actions include rulemaking; improved data collection, sharing and analysis; development of a joint application, harmonized public participation procedures, BMP and ADID evaluations; and close interagency coordination. These actions would serve to further minimize the adverse effects on aquatic and terrestrial resources and protect the public.</p>
<b>Action Alternative 3</b>	<p>The COE would begin processing most MTM/VF projects as NWP 21 and few projects would require IP processing. The SMCRA program would be enhanced as described in Alternative 2 and the SMCRA regulatory authority would assume the primary role of joint application review. The COE, or a state through a programmatic general permit from the COE, would base CWA authorizations largely on the SMCRA review with the addition of adequate off-site mitigation. The COE would require the IP process if its review found an application inadequate due to lack of data, alternatives considered, or mitigation. Satisfaction of ESA would be identical to Alternative 1 and 2. The cross-program actions are identical to Alternative 2 with the exception that no ADIDs would be developed. These actions would serve to further minimize the adverse effects on aquatic and terrestrial resources and protect the public.</p>

\* Complete descriptions of the alternatives are in Chapter II.C.; acronyms can be found on page 1 of this EIS.

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As described in more detail in the Draft EIS, the Federal and/or state agencies cooperatively would:

- develop guidance, policies, or institute rulemaking for consistent definitions of stream characteristics, as well as field methods for delineating those characteristics.
- continue to evaluate the effects of mountaintop mining on stream chemistry and biology.
- continue to work with states to further refine the uniform, science-based protocols for assessing ecological function, making permit decisions and establishing mitigation requirements.
- continue to assess aquatic ecosystem restoration and mitigation methods for mined lands and promote demonstration sites.
- incorporate mitigation/compensation monitoring plans into SMCRA/NPDES permit inspection schedules and coordinate SMCRA and CWA requirements to establish financial liability (e.g., bonding sureties) to ensure that reclamation and compensatory mitigation projects are completed successfully.
- work with interested stakeholders to develop a best management practices (BMPs) manual for restoration/replacement of aquatic resources.
- evaluate and coordinate current programs for controlling fugitive dust and blasting fumes from mountaintop MTM/VF operations, and develop BMPs and/or additional regulatory controls to minimize adverse effects, as appropriate.
- develop guidelines for calculating peak discharges for design precipitation events and evaluating flooding risk. In addition, the guidelines would recommend engineering techniques useful in minimizing the risk of flooding.
- based on the outcome of ongoing informal consultation, identify and implement program changes, as necessary and appropriate, to ensure that MTM/VF is carried out in full compliance with the Endangered Species Act.
- in Alternatives 1 and 2, EPA and the COE would consider designating areas generally unsuitable for fill, referred to as Advanced Identification of Disposal Sites (ADID).
- in Alternatives 2 and 3, the agencies would develop a joint MTM/VF application form.

The COE would:

- continue to refine and calibrate the stream assessment protocol for each COE District where MTM/VF operations are conducted to assess stream conditions and to determine mitigation requirements as part of the permitting process.
- compile data collected through application of the assessment protocol along with PHC, CHIA, antidegradation, NPDES, TMDLs, mitigation projects, and other information into a GIS database.
- use these data to evaluate whether programmatic “bright-line” thresholds, rather than case-by-case minimal individual and cumulative impact determinations, are feasible for CWA Section 404 MTM/VF permits.

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The OSM and/or the state SMCRA regulatory authorities would:

- continue rule making to clarify the stream buffer zone rule and require fill minimization and alternatives analysis.
- in conjunction with the PHC, CHIA, and hydrologic reclamation plan, apply the COE stream assessment protocol to consider the required level of onsite mitigation for MTM/VF.
- develop guidelines identifying state-of-the-science BMPs for selecting appropriate growth media, reclamation techniques, revegetation species, and success measurement techniques for accomplishing post-mining land uses involving trees.
- if legislative authority is established by Congress or the states, require reclamation with trees as the post mining land use.

The EPA would:

- develop and propose, as appropriate, criteria for additional chemicals or other parameters (e.g., biological indicators) that would support a modification of existing state water quality standards.

The FWS would:

- continue to work with Federal and state SMCRA and fish and wildlife agencies to implement the 1996 Biological Opinion and streamline the coordination process.
- work with agencies to develop species-specific measures to minimize incidental takes of T&E species.

### Environmental and Process Benefits

The alternatives and actions were developed with the objective that each would satisfy the requirements of the CWA and SMCRA. Each proposed alternative would enhance environmental protection and better coordinate implementation of CWA and SMCRA, as compared to the No Action Alternative. The No Action Alternative contains a number of CWA and SMCRA provisions for programmatic changes which occurred during development of this EIS to enhance environmental protection. These changes include, but are not limited to: finalization of rule-making by EPA and the COE to define “fill” material; reauthorization by the COE of NWP 21, requiring case-by-case evaluations and compensatory mitigation; increased focus on enhanced baseline data collection and monitoring of biological and chemical aspects of aquatic resources by the agencies; implementation of state policies regarding approximate original contour that maximizes backfill and minimizes excess spoil; development of stream delineation policy, commercial forestry regulations, surface water runoff analysis and blasting



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regulations by WVDEP; promotion of reforestation by OSM and the states; and development of a post mining land use policy by OSM.

In addition, pursuant to the *Bragg* settlement agreement, the agencies implemented an interim permit process, including the general condition that fills in watersheds of more than 250 acres would require IP processing in West Virginia. Based, in part, on the interim 250-acre watershed threshold, CWA NWP 21 renewal requirements, program changes by SMCRA resource agencies, and coal market influences, there has been a reduction in the size and number of valley fills that have been permitted annually since the initiation of this EIS in 1998. The experience of the agencies resulting from the increased permit scrutiny and interagency review has been utilized in the development of this EIS.

Each proposed action alternative would enhance environmental protection and better coordinate implementation of CWA and SMCRA, as compared to the No Action Alternative. Alternatives 1, 2 and 3 build upon existing “best science” methods for characterizing aquatic resources. The goal is to bring stakeholders, as well as state and Federal agencies, together to establish common criteria and science-based methods for determining baselines, impacts, and mitigation requirements. Monitoring information could be used to identify and evaluate T&E listed species habitats; stream reaches supporting naturally diverse and high quality aquatic populations; sole or principal drinking water source aquifers; or other specially-protected areas.

Better stream protection from direct and indirect effects would result from improved characterization of aquatic resources; operations designed to avoid and minimize adverse effects and restore aquatic functions; and compensatory mitigation plans with improved design, inspection, and enforcement. With better characterization of these resources, excess spoil fills can be placed in locations that may minimize adverse environmental effects and may reduce direct impacts.

All three action alternatives would result in reduced environmental impacts from excess spoil disposal. Even the No Action Alternative requires a demonstration to the COE prior to CWA Section 404 authorization that impact avoidance (“upland” options) and minimization (least direct impacts practicable) have occurred. Use of the CWA Section 404(b)(1) Guidelines and/or COE functional stream assessment protocol for CWA Section 404 permits would identify high-functioning streams and favor fill locations where impaired streams exist, due to CWA avoidance provisions and lower mitigation costs. The proposed changes or development of regulations, policies, and/or guidelines will result in operations that avoid, minimize, or mitigate, to the maximum extent practicable, significant adverse impacts to the waters of the U.S. and prevent material damage outside the permit area. It is anticipated that these actions would further minimize direct stream loss.

The data mandated by different regulatory programs results in some duplication of collection and analysis, typically only assessed for particular program requirements. Compiling similar data from varied sources could serve multiple program goals and objectives. The use of GIS to

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compile other relevant resource, ecosystem, or community information is a logical augmentation to the aquatic data for use in COE NEPA compliance. Use of information technology to collect, compile, screen, and update aquatic and other resource information in GIS, linked to various databases, would provide for better informed and timely permit decisions regarding aquatic impacts and a reference library to assist in future decisions. Evaluation of these data could result in establishment of individual or cumulative impact CWA thresholds for NWP 21, if feasible.

Enhanced assessments would reduce the cumulative adverse impacts of MTM/VF through more environmentally-protective designs; enhanced compensatory mitigation that emphasizes onsite reclamation and restoration of degraded streams within a watershed; identifying and developing best management practices for restoring aquatic functions impacted by mining; and inclusion of improved techniques to grow trees and more quickly restore mined land to better terrestrial habitat. Agencies would continue to identify better practices to reduce fugitive dust and fumes from mining, and thus, reduce impacts to adjacent communities. Flooding would be reduced by improved mining design, flood analysis, and, in the longer term, restoring the post mining land use to trees.

Common data elements in a joint application form could lead to more efficient analytical approaches among the agencies. Reliance on these analytical results could facilitate agreements among agencies and provide a basis for one agency to confidently rely on the findings of another agency. The Memorandum of Agreement (MOA) and Field Operating Procedures (FOP) proposed by the action alternatives should improve consistency, permit coordination, and reduce the processing time with a logical, concurrent process.

Improved communications, through pre-permit application meetings and the use of a designated regulatory authority as a focal point for initial data collection, should result in better cataloguing of T&E species, cultural, and historic properties, as well as addressing these issues at the earliest possible stages of permit review.

An MOA would be developed under Alternatives 1, 2, and 3 to clearly define and commit to writing the roles and responsibilities of each agency for permitting, monitoring/inspection, and bonding of mitigation projects. This would provide the agencies with the opportunity to coordinate these activities in order to increase certainty that all mitigation requirements are being implemented and minimize identified inefficiencies associated with duplicate systems. By incorporating all mitigation construction plans/specifications, time lines, and success criteria into each issued permit, an inspector will have all the information needed to ensure the mitigation projects are properly completed.

The proposed alternatives and actions would better inform the public and provide more meaningful participation, in part because plans would more thoroughly address impacts to environmental resources. Many of the actions are designed to facilitate methodical, sequenced review processes while improving environmental protection. A coordinated review process could reduce processing times and costs of permit applications, which may offset some of the

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increased costs and times associated with the additional data collection and analysis requirements of the actions. Each action alternative would support efficient, environmentally responsible production of energy resources, and would help clarify environmental performance standards for stakeholders and regulators. Likewise, each action alternative would lead to more complete permit information as a better basis for regulatory decisions.

In summary, joint evaluations of MTM/VF proposals would result in more expansive considerations of both environmental impacts and effective treatments to mitigate those impacts. This coordinated process would also facilitate selection, implementation and monitoring of mitigation projects. The coordinated process and actions that make up the action alternatives could minimize adverse environmental effects by enhancing the following:

- identification of the environmental resources;
- prediction of environmental impacts;
- avoidance of special/high-value environmental resources;
- development of operation plans that mitigate (i.e. avoid, minimize, avoid, and compensate) adverse environmental impacts;
- consideration of the least damaging practicable alternative in fill placement;
- minimization of excess spoil material;
- consideration of adverse cumulative environmental effects;
- coordination of data sharing and analyses among key regulatory agencies to provide more informed decisions under the respective programs;
- technology transfer to identify the best practices reclamation techniques available to avoid or minimize adverse environmental impacts; and,
- communication among stakeholders and regulators.

The environmental and programmatic benefits of the alternatives are summarized in Chapter II. The consequences (environmental, economic, administrative, and environmental justice impacts) of implementing programmatic actions under the various alternatives are presented in Chapter IV. The consequences of implementing any of the three action alternatives would have impacts similar to those of the No Action Alternative on the social conditions, cultural, historic and visual resources, and environmental justice populations in the EIS study area. Implementation of the proposed actions carry economic consequences to the regulated community and administrative costs to the agencies. In particular, data collection and analysis, fill minimization and avoidance, and mitigation present the major cost considerations for industry. Administrative costs to the agencies stem from the necessity of additional staff to evaluate applications that include increased data, alternatives analyses, impact predictions, and mitigation measures. The relative costs of these actions are discussed in Chapter IV.

EPA is in the process of writing a Biological Assessment (BA) that would identify any T&E species likely to be adversely affected by the proposed action. Measures to avoid adversely

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affecting the listed species would be considered in the BA. Information about the findings of the BA and the informal consultation will be in the Final EIS.

### **Public Comment Sought**

The agencies now seek public comments on this Draft EIS. Following consideration of the comments, a Final EIS will be published.

This EIS, a comprehensive document developed through an extraordinary inter-agency effort, is designed to inform more environmentally sound decision making for future permitting of MTM/VF. To this end, this EIS includes a substantial amount of environmental and economic data associated with MTM/VF collected and analyzed by these agencies. We have cooperatively evaluated our various programs and believe this EIS includes much valuable information that will assist our respective agencies to better coordinate the review necessary under each agency's mandates. We believe this document will contribute to more efficient decision-making by coordinating data collection and environmental analyses by the respective agencies, resulting in better permit decisions on a watershed basis.